

In the Claims

1. (Previously amended) A process for expanding a population of endothelial cells obtained from peripheral blood comprising culturing, in contact with a collagen I-coated surface, buffy coat cells which are obtained from peripheral mammalian blood, in the presence of a cell culture medium containing an effective amount of vascular endothelial growth factor (VEGF), and which medium is free of bovine brain extract, so as to expand the population of endothelial cells in said buffy coat cells.
2. (Original) The process of claim 1 wherein the blood is human blood.
3. (Original) The process of claim 1 wherein said cell culture medium comprises heparin, dextran sulfate or mixtures thereof.
4. (Original) The process of claim 1 wherein the buffy coat cells are obtained by washing cells from a buffy coat layer obtained from human blood in cell culture medium comprising 20% human male serum.
5. (Original) The process of claim 1 wherein the cell culture medium comprises human basic fibroblast growth factor.
6. (Original) The process of claim 1 or 5 wherein the cell culture medium comprises insulin-like growth factor.
7. (Original) The process of claim 1 or 5 wherein the cell culture medium contains human epidermal growth factor.
8. (Previously amended) The process of claim 1 wherein the cell culture medium comprises about 0.5-10 vol-% fetal bovine serum .

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9. (Previously amended) The process of claim 1 further comprising trypsinizing the cultured cells at about 10^3 -fold expansion, collecting the trypsinized cells by centrifugation, resuspending the collected cells in cell culture medium, and subjecting the resuspended cells to culture in contact with a fibronectin- and gelatin-coated surface.
 10. (Original) The process of claim 1 wherein the cultured cells are subjected to cryopreservation.
 11. (Original) The process of claim 10 wherein the cells are frozen in a cryopreservation medium comprising fetal calf serum containing an effective amount of dimethylsulfoxide.
 12. (Original) The process of claim 10 or 11 wherein the cryopreserved cells are thawed and culturing is resumed in said cell culture medium.
 13. (Original) The process of claim 1 wherein the expanded population comprises microvascular endothelial cells.
 14. (Original) The process of claim 13 wherein the microvascular endothelial cells are CD34⁺, CD36⁺ and express the P1H1 antigen.
 - 15.-43. (Canceled)
 44. (Currently amended) A population of expanded endothelial cells prepared by the method of claim 1, wherein the expanded population has a cobblestone morphology, and wherein the expanded population comprises a majority of cells with an expansion potential that is greater than vessel wall-derived endothelial cells in blood after about 26 to 28 days in culture.

45. (Previously added) The process of claim 1 wherein the cell culture medium comprises hydrocortisone.
46. (Previously added) The process of claim 1 wherein the cell culture medium comprises human serum.